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23. The foot switch of claim 21, wherein said at least one stopper is arranged on an underside of said operation member.

24. The foot switch of claim 21, wherein each of said at least one stopper is arranged proximate a respective one of said at least one detection unit.

A18

25. The foot switch of claim 14, wherein said coating member includes a plurality of separate protrusions.

26. The foot switch of claim 14, further comprising at least one sustaining plate arranged on said frame and including a raised, stopper portion for limiting displacement of said operation member, said at least one detection unit being arranged on a respective one of said at least one sustaining plate.--

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### REMARKS

Claims 1-11 and new claims 12-26 are now in this application. Claims 1-11 are rejected and are amended herein to clarify the invention, to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues.

Drawings

Submitted with a Letter to the Draftsperson accompanying this amendment are proposed revised Figs. 10 and 11 which have been amended to include the notation "Prior Art".

Specification

The specification has been amended to correct typographical errors, remove reference to the claims and clarify the disclosure. No new matter has been added by the changes to the specification.

Claim Rejection

Claims 1-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hector et al. (U.S. Pat. No. 4,720,789) in view of Saur et al. (U.S. Pat. No. 6,110,073).

The Examiner's rejection is respectfully traversed.

Independent claim 1 includes the feature of a detection unit capable of outputting a predetermined detection signal in response to changes in load in a predetermined direction in relation to an operation member such as a foot panel. The detection unit includes a sensing element and a coating member made of elastic material which coats the sensing element and functions as a medium to transmit the load applied to the operation member to the sensing element. Further, the coating member is arranged to contact the operation member and support the operation member in the predetermined direction. Thus, in these embodiments, the coating member performs several functions, namely, coats or covers the sensing element, transmits the load applied to the operation member to the sensing element and supports the operation member. Independent claim 9 includes similar features.

The prior art cited by the Examiner does not disclose a coating member as set forth in claims 1 and 9.

Hector et al. shows a floor controller comprising a base member 62, a pad 42 supported on the base member 62 by resilient foam members 64 and a membrane switch 66 arranged below the pad 42. The resilient foam members 64 support the pad 42 but do not function as a coating member for coating the

membrane switch. Therefore, as admitted by the Examiner, Hector et al. lacks an elastic coating member which supports an operation member as well.

With respect to Saur et al., the Examiner takes a position that the combination of adhesive 47 and pad 18 corresponds to an elastic coating member, which functions to support an operation member. Pad 18 is actually a foot pad made of an electrically conductive material and electrically connects contacts 43 when depressed (See Fig. 9). Contacts 43 are part of switch elements 42 which are covered by the adhesive 47. Adhesive 47 serves to fix the foot pad 18 and a non-conductive sheet 34 to each other to thereby prevent the deviation between, the contacts 43 and the raised nubs 56 of the pad 18.

The combination of the adhesive 47 and pad 18 do not constitute a coating member arranged in the same position as and which performs the same functions as the coating member in the embodiments of claims 1 and 9. In particular, the switch elements 42 are not coated or covered by the combination, because for example the lower surface of the switch element 43 are not coated by the adhesive 47 or the pad 18, and there is nothing above the combination to be supported, because the pad is the uppermost component in the floor controller (see Fig. 1).

Since Saur et al. does not teach or suggest a coating member which is arranged in the same manner as and performs the same functions as the coating member of the embodiments of claims 1 and 9, it is respectfully submitted that one skilled in the art would not have been able to combine any purported teachings of Saur et al. and Hector et al. and arrive at the embodiments of the invention set forth in claims 1 and 9 and claims 2-8, 10 and 11 which depend from claim 1 or 9.

In view of the arguments presented above, it is respectfully submitted that the Examiner's rejection of claims 1-11 has been overcome and should be removed.

#### New Claims

New claims 12-26 are added. Claims 12 and 13 recite additional features of the input apparatus of claim 11. The cavity defined in the coating member (claim 13) is shown clearly in Figs. 4B and 4C.

Claims 14-26 are directed to a foot switch in accordance with the invention. Independent claim 14 recites at least one detection unit arranged on a support surface of a frame and to output a detection signal in response to changes in a load

applied in a predetermined direction and including a sensing element and a coating member made of elastic and surrounding the sensing element. Further, claim 14 recites an operation member adapted to receive a load and arranged in contact with the coating member such that the coating member supports the operation member on the frame and transmits the load received by the operation member to the sensing element. Claims 15-26 depend directly or indirectly on claim 14. The features of claims 14-26 are not shown in the prior art cited by the Examiner.

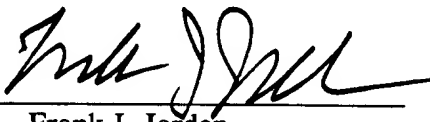
Eleven claims in excess of twenty are added. Accordingly, please charge the fee of \$198.00 to Deposit Account No. 10-1250.

Applicant respectfully requests a two month extension of time for responding to the Office Action. Please charge the fee of \$400 for the extension of time to Deposit Account No. 10-1250.

In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any deficiency or credit any overpayment to Deposit Account No. 10-1250.


Respectfully submitted,

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enc: Letter to Draftsman with proposed drawing amendments of Figs. 10 and 11



## APPENDIX I

AMENDED CLAIMS WITH AMENDMENTS INDICATED THEREIN  
BY BRACKETS AND UNDERLINING

1. (Amended) An input apparatus for game systems comprising:  
an operation member adapted to receive a load; [a supporting device  
for supporting the operation member in a predetermined direction;] and  
a detection unit capable of outputting a predetermined detection  
signal in response to changes in load in [the] a predetermined direction in relation  
to [the] said operation member,  
[wherein the] said detection unit [has] including a sensing element  
and [an elastic-material-made] a coating member [not only] made of elastic  
material, said coating member coating [the] said sensing element [but also] and  
functioning as a medium to transmit the load applied to [the] said operation member  
to [the] said sensing element, [wherein the]  
said coating member [also functions as the supporting member by  
contacting with the] being arranged to contact said operation member and support  
said operation member in the predetermined direction.

2. (Amended) The input apparatus of claim 1, wherein [the] said coating member [has] includes a protrusion for limiting a position to which the load toward [the] said sensing element is transmitted into a certain range.

3. (Amended) The input apparatus of claim 1, wherein [the] said sensing element [of the detection unit] includes one pair of [band-like] electrode plates [that contacts to or separates] arranged to contact or separate from each other according to the load, and [the] said coating member includes a protrusion for limiting a position to which the load toward [the] said sensing element is transmitted [into a certain range positionally] , said protrusion being shifted from both longitudinal ends of [the] said electrode plates into a central side thereof.

4. (Amended) The input apparatus of [either one of] claim 2 or 3, wherein [the] said protrusion is arranged on an outer surface of [the] said coating member.

5. (Amended) The input apparatus of [either one of] claim 2 or 3, wherein [the] said protrusion is arranged on an inner surface of [the] said coating member.

6. (Amended) The input apparatus of claim 1, further comprising a stopper for limiting [a] displacement of said operation member in relation to the predetermined direction [of the operation member into] in a certain range.

7. (Amended) The input apparatus of claim [5] 6, wherein at least an outer surface portion of [the] said operation member is formed into a [panel-like shape] panel, [the] said detection unit [is disposed to make] being arranged to contact [with the] said outer surface portion of [the] said operation member, and [the] said stopper is located [nearer side] closer to a center of [the] said operation member than that of [the] said detection unit.

8. (Amended) The input apparatus of claim 7, wherein [the] said stopper [is adjoining the] adjoins said detection unit.

9. (Amended) An input apparatus for game systems comprising:  
a base having a plurality of panel-attaching sections;  
[a panel-like] an operation member arranged at each of [the plurality of]  
said panel-attaching sections and adapted to receive a load;  
a detection unit located between a panel-supporting surface formed  
on each of [the plurality of] said panel-attaching sections and [the] said operation

member and capable of outputting a predetermined detection signal in response to changes in pushing load applied to [the] said operation member,

[wherein the] said detection unit [has] including a sensing element and [an elastic-material-made] a coating member [not only] made of elastic material, said coating member coating [the] said sensing element [but also] and functioning as a medium to transmit the load applied to [the] said operation member to [the] said sensing element,

[wherein the] said coating member [supports the] being arranged to support said operation member by contacting [with the] said operation member.

10. (Amended) The input apparatus of claim 9, wherein [the] said detection unit [is made up of] comprises a plurality of detection units arranged at each of said panel-attaching [section] sections such that [the] said operation member is supported at a plurality of points around an outer circumference thereof, and a stopper for limiting an amount of pushing operation toward [the] said operation member is arranged at an inside of each detection unit.

11. (Amended) The input apparatus of [either one of] claim 1 or 9, wherein [the] said operation member is [composed as] a foot panel on which a player is able to stamp.

## APPENDIX II

AMENDED SPECIFICATION PARAGRAPHS WITH AMENDMENTS  
INDICATED THEREIN BY BRACKETS AND UNDERLINING

Page 1: 1<sup>st</sup> full paragraph, is amended as indicated below:

There has been known an input apparatus for game systems shown in Figs. 10 and 11. This input apparatus 1 is used to detect player's stamping actions, which has a configuration in which an inner frame 3 having a panel sustaining plane 3a is disposed on the inner circumference of an outer frame 2 formed into an approximate square. A cable switch 5 is arranged by way of a support plate 4 on the panel sustaining plane 3a. A switch bracket 6 is arranged above the cable switch 5 and an acrylic-material-made panel 7 is placed on the upper surface of the switch bracket 6. The cable [swatch] switch 5 is placed on each side of the panel 7.

2<sup>nd</sup> full paragraph, is amended as indicated below:

The cable switch 5, [of] which has a surface [is] coated [by] with rubber, has inner contacts that connect with each other and outputs a predetermined detection signal, when a load is applied to the coated rubber. The switch bracket 6 has a metal-made bracket body 6a attached displaceably up and down against the

inner frame 3 and a dumper 6b made to contact the panel 7. The panel 7 is supported at [not-shown] corner supporting members placed at the four corners (not shown) and supported [~~displasably~~] displaceably up and down in contact with the switch bracket 6. The switch bracket 6 is arranged so that it faces the central portion in the longitudinal direction of the cable switch 5, and the width of the switch bracket is determined to a length corresponding to 1/3 to 1/2 of the [whole] entire length of the cable switch 5. Thus, when a player stamps the panel 7, its load intensively concentrates at the central portion of the cable switch 5 through the switch bracket 6. This enables the cable switch 5 to swell in sensitivity, so that a stamping action can steadily be detected even when the [stapling] stamping load applied to the panel 7 is relatively light.

Page 2: 1<sup>st</sup> full paragraph, is amended as indicated below:

An object of the present invention is to provide an input apparatus used by a game system, where the configuration of the input apparatus is simplified [thanks to] by omitting switch brackets.

3<sup>rd</sup> full paragraph, is amended as indicated below:

According to the invention [of claim 1], [the foregoing object is solved by] an input apparatus for game systems [comprising] comprises an operation member;

a supporting device for supporting the operation member in a predetermined direction; and a detection unit capable of outputting a predetermined detection signal in response to changes in load in the predetermined direction in relation to the operation [member, wherein the] member. The detection unit has a sensing element and an elastic-material-made coating member not only coating the sensing element but also functioning as a medium to transmit the load applied to the operation member to the sensing [element, wherein the] element. The coating member also functions as the supporting member by contacting [with] the operation member.

Page 3: 1<sup>st</sup> full paragraph, is amended as indicated below:

In [the invention of claim 2, which is based on the input apparatus of claim 1] another embodiment, the coating member has protrusions for limiting a position to which the load toward the sensing element is transmitted into a certain range.

3<sup>rd</sup> full paragraph, is amended as indicated below:

In [the invention of claim 3, which is based on the input apparatus of claim 1] yet another embodiment, the sensing element of the detection unit includes one pair of band-like electrode plates that [contacts to] contact or [separates] separate from each other according to the load, and the coating member includes protrusions

for limiting a position to which the load toward the sensing element is transmitted into a certain range positionally shifted from both longitudinal ends of the electrode plates into a central side thereof.

5<sup>th</sup> full paragraph, is amended as indicated below:

In [the invention of claim 4, which is based on the input apparatus of either one of claim 2 or 3] still another embodiment, the protrusions are arranged on an outer surface of the coating member.

Page 4: 2<sup>nd</sup> full paragraph, is amended as indicated below:

In [the invention of claim 5, which is based on the input apparatus of either one of claim 2 or 3] another embodiment, the protrusion is arranged on an inner surface of the coating member. A load transmitted to the coating member is, therefore, intensively transmitted to a certain area of the sensing element by way of the protrusion.

3<sup>rd</sup> full paragraph, is amended as indicated below:

In [the invention of claim 6, which is based on the input apparatus of claim 1] another embodiment, there is further provided a stopper for limiting a



displacement in relation to the predetermined direction of the operation member into a certain range.

4<sup>th</sup> full paragraph, is amended as indicated below:

In [the invention of claim 7, which is based on the input apparatus of claim 5] yet another embodiment, at least an outer surface portion of the operation member is formed into a panel-like shape, the detection unit is disposed to make contact with the outer surface portion of the operation member, and the stopper is located [nearer side] closer to a center of the operation member than that of the detection unit.

Pages 4 and 5, replace the paragraph bridging these pages with the following:

In [the invention of claim 8, which is based on the input apparatus of claim 7] another embodiment, the stopper is adjoining the detection unit. As a result, the operation member, which comes into contact with the stopper, deflects at the contacted position serving as a support, wherein an amount of deflection of the operation member on the detection unit is limited to a minimum. Accordingly, an overloaded input to the detection unit can be avoided in a steady manner.

Page 5: 1<sup>st</sup> full paragraph, is amended as indicated below:

[According to the invention of claim 9] In another embodiment, the foregoing object is solved by an input apparatus for game systems comprising an input apparatus for game systems comprising a base having a plurality of panel-attaching sections ; a panel-like operation member arranged at each of the plurality of panel-attaching sections ; a detection unit located between a panel-supporting surface formed on each of the plurality of panel-attaching sections and the operation member and capable of outputting a predetermined detection signal in response to changes in pushing load applied to the operation [member, wherein the] member. The detection unit has a sensing element and an elastic-material-made coating member not only coating the sensing element but also functioning as a medium to transmit the load applied to the operation member to the sensing [element, wherein the] element. The coating member supports the operation member by contacting [with] the operation member.

Pages 5 and 6, replace the paragraph bridging these pages with the following:

Thus, [like the claim 1 invention,] since the coating member arranged to the detection unit comes into contact with the operation member to support it, it is unnecessary to place, between the detection unit and the operation member, a

member that corresponds to a conventional switch bracket. Thus the input apparatus is simplified in construction, labor work for manufacture and maintenance is relieved, the reliability of the apparatus is improved, and manufacturing costs are reduced. Additionally, in this [invention] embodiment, the supporting direction of the operation member by the coating member includes a variety of directions, such as the vertical and horizontal directions. In other words, it is enough that the coating member comes into contact with the operation member and is capable to receive a load applied in a predetermined direction to the operation member. The coating member may be fixedly in contact with the operation member. Alternatively, the coating member may be made to contact the operation member only when a load exceeding a predetermined value is applied to the operation member. In the latter, there may additionally be provided an auxiliary supporting device to support the operation member displaceably in the predetermined direction when both the coating and operation members are not in contact.

Page 6: 1<sup>st</sup> full paragraph, is amended as indicated below:

[In the invention of claim 10, which is based on the input apparatus of claim 9, the] The detection unit [is made up of] may comprise a plurality of detection units arranged at each panel-attaching section such that the operation member is

supported at a plurality of points around an outer circumference thereof, and a stopper for limiting an amount of pushing operation toward the operation member is arranged at inside of each detection unit.

3<sup>rd</sup> full paragraph, is amended as indicated below:

[In the invention of claim 11, which is based on the input apparatus of either one of claim 1 or 9, the] The operation member [is composed as] may be a foot panel on which a player is able to stamp. Accordingly, there can be provided a foot switch having various advantages; player's stamping actions are detectable, the apparatus is simplified in construction, manufacturing and maintenance are easier, the reliability is higher, and manufacturing costs are reduced.

Page 8: 1<sup>st</sup> full paragraph, is amended as indicated below:

Figs. 1 and 2 show the configuration of a foot [switch] switch 24. The foot switch 24 is arranged to detect a player's stamping action. Through the base 21, approximately square panel-attaching sections 26 surrounded by an outer frame 25 are formed, and in the inside of each panel-attaching section 26, an approximate square inner frame 27 is displaced so as to surround the sections 26. The upper surface of the inner frame 27 is formed into a panel-supporting surface 27a that is lower in height than that of the outer frame 25. A sustaining plate 28 is attached

on the overall panel-supporting surface 27a. Both the side edges of the sustaining plate 28 are folded [back] upward. Moreover, at the four corners of the inner frame 27, corner plates 29[, ..., 29] are located. The foregoing outer frame 25, inner frame 25, sustaining plate 28 and corner plates 29 are manufactured by sheet metal processing. Both the sustaining plate 28 and the corner plates 29 are integrated through the sheet metal processing. In contrast, the sustaining plate 28 and corner plates 29 may be formed into individual members separated from each other.